

Claims

1. A magnetic tag for storing data, comprising at least one magnetic element configured such that the data is stored by reference to a combination of two or more characteristics associated with the or each element.
- 5 2. A magnetic tag according to Claim 1, wherein a first one of the characteristics is used to distinguish the or each element and a second one of the characteristics is used to store data.
3. A magnetic tag according to Claim 2, wherein a further one or more of the characteristics are used to store additional data.
- 10 4. A magnetic tag according to Claim 1, wherein the two or more characteristics include one or more selected from element coercivity, element bias, element orientation, amplitude response of an element, response bandwidth, dependence of element switching field in response to the rate of change of an applied field, element switching speed, element location, maximum cross-field bias, permeability,
15 Barkhausen response and resonant frequency.
5. A magnetic tag according to Claim 1, in which two or more bits of data are stored by the or each element.
6. A magnetic tag according to Claim 1, comprising a plurality of magnetic elements, each of the magnetic elements being disposed in a different orientation by
20 which it is distinguishable from the other elements and each having a magnetic bias member capable of assuming a plurality of states, wherein data is stored by the state assumed by the magnetic bias member .
7. A magnetic tag according to Claim 6, in which the orientation of each of the elements is selected from a set of possible orientations, whereby to store additional
25 data.

8. A magnetic tag according to Claim 6, in which one or more of the elements is arranged to exhibit a different coercivity, whereby to store additional data.

9. A magnetic tag according to Claim 6, in which one or more of the elements is arranged to exhibit a different amplitude response from that of the other elements,
5 whereby to store additional data.

10. A magnetic tag according to Claim 9, wherein the effective dimensions of one or more of the elements is different from that of other elements to produce a variation in amplitude response.

11. A magnetic tag according to Claim 1, comprising a plurality of intersecting
10 magnetic elements, each of the magnetic elements being disposed in a different orientation by which it is distinguishable from the other elements and each having a coercivity selected from a set of possible coercivities, whereby to store data.

12. A magnetic tag according to Claim 11, wherein the relative orientations of the elements are used to identify the elements and to store data, and the coercivities of the
15 elements are used to store further data.

13. A magnetic tag according to Claim 11, wherein the intersecting elements are arranged such that they do not bisect one another.

14. A magnetic tag according to Claim 1, comprising a plurality of magnetic
20 elements, each of the magnetic elements being disposed in a different orientation by which it is distinguishable from the other elements and each being located at one of a plurality of possible locations whereby to store data.

15. A magnetic tag according to Claim 1, comprising a plurality of magnetic
25 elements, each of the magnetic elements being located at one of a plurality of possible locations and each having a coercivity which is selected from a set of possible coercivities, whereby to state data.